Asia Investor Group on Climate Change (AIGCC)

Background Briefing: GX-ETS Investors' Perception of Carbon Cost

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info@aigcc.net

www.aigcc.net

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This report is not intended to facilitate or require collective decision-making regarding an investment decision. This initiative and report will not provide recommendations to investors to divest, vote in a particular way or make any other investment decision – investors are expected to continue to make their own independent investment and strategic decisions.

Executive Summary

Japan's Green Transformation (GX) Emissions Trading Scheme (ETS), known as the GX-ETS, is scheduled to commence the mandatory phase in 2026. The scheme assigns monetary value to corporate climate risks and opportunities based on carbon emissions. As a result, we expect carbon pricing to become critical information for institutional investors.

When AIGCC surveyed investment professionals about the GX-ETS, many respondents indicated they increasingly incorporate carbon emissions data into their investment decision-making. However, using carbon cost information is still relatively nascent. The survey results also unveiled similar findings from asset management companies and their use of carbon emissions data and carbon price data.

In terms of the appropriate level of carbon pricing, many investors believe that it should align with that of the European Union (EU). Further, many investors expect that carbon pricing impacts on Japanese companies will serve as a catalyst for strengthening cost management capabilities and fostering innovation for green transformation.

Meanwhile, targeted MSCI research on carbon pricing implications has suggested that the extent of sharing carbon costs across the value chain, including customers, will ultimately determine the impact on corporate value.

Although GX-ETS starts in 2026, we expect its material impact on corporate performance to emerge from 2027 onward. As the policy design advances, we can also anticipate that investors will treat carbon pricing not as a "policy risk" but as a built-in factor, and to respond strategically.

Introduction

The impact of climate change measures on capital markets is becoming rapidly visible alongside progress in policy design. In Japan, government discussions on the GX-ETS (Green Transformation Emissions Trading Scheme) are entering the final stage of system design. Preparations are also underway to mandate participation in the scheme for companies that emit over 100,000 tons of Scope 1 emissions annually, based on a three-year average, starting in fiscal year 2026.[1]

Around 300 to 400 companies are projected to fall under this requirement, covering about 60% of Japan's total emissions. This move is part of a broader institutional strengthening following the revision of the GX Promotion Act, promulgated in May 2025.

The GX-ETS, as a system that assigns value to carbon, not only sends price signals to influence corporate emissions behaviour but also provides investors with a new approach for risk assessment and opportunity selection. As emission costs are properly reflected, investors will reassess corporate valuations that will align with their investment decisions, which increasingly integrate climate-related risks and opportunities.

This report focuses on the following three areas in analysing the impact of the GX-ETS and carbon pricing mechanisms on Japan's investment landscape:

1. Perceptions and expectations of carbon pricing among investment professionals
2. Example of climate risk and opportunity integration in asset management practices
3. Potential impact analysis of carbon pricing on the valuation of Japanese-listed companies (based on MSCI analysis)

[1] Ministry of Economy, Trade and Industry「産業構造審議会 排出量取引制度小委員会中間整理 ～排出枠の割当ての実施指針等に関する事項～」(Interim Summary of the Subcommittee on Emissions Trading Scheme). December 2025.

Chapter 1: Investor perspectives on the GX-ETS and carbon pricing

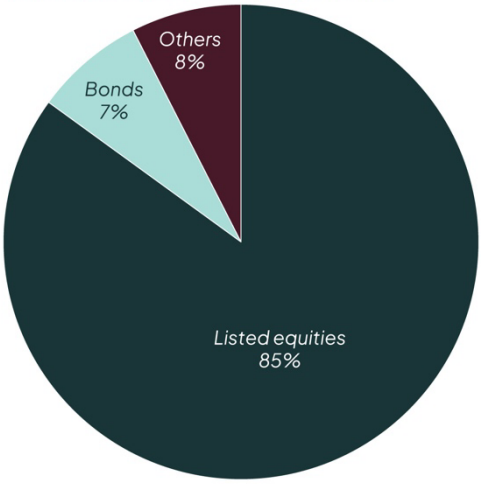
AIGCC surveyed individual investment professionals to better understand:

1. Investor awareness of carbon emissions trading systems that the government is currently discussing
2. Investor use of carbon-related information
3. Investor expectations on the introduction of carbon pricing.

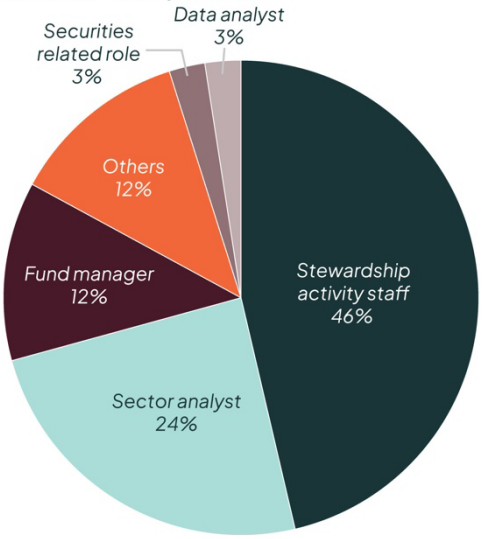
Survey title: Investor survey on the GX-ETS and carbon pricing
Survey period: 12 August – 23 September, 2025
Number of valid responses: 41 individuals

Respondent attributes

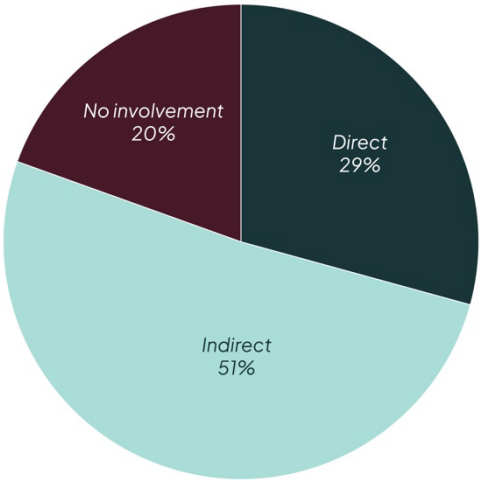
a. Asset classes covered by respondents



b. Roles of the respondents



c. Involvement level in investment decision-making in daily work



- For asset classes covered, 85% of respondents reported being involved in investment activities related to equity management.

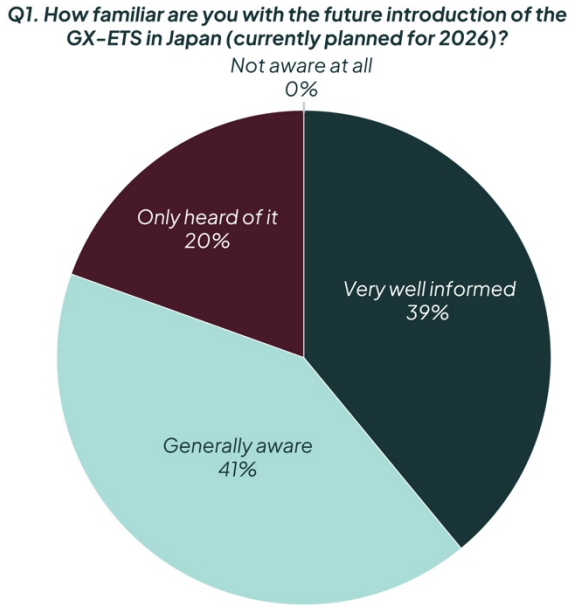
- About half were engaged in stewardship activities. Sector analysts who responded were responsible for high-emitting sectors (direct and lifetime high emitting), such as power and automotive sectors. Further, 12% were fund managers directly engaged in portfolio construction and management.

- Most respondents indicated they were directly or indirectly involved in investment decisions.

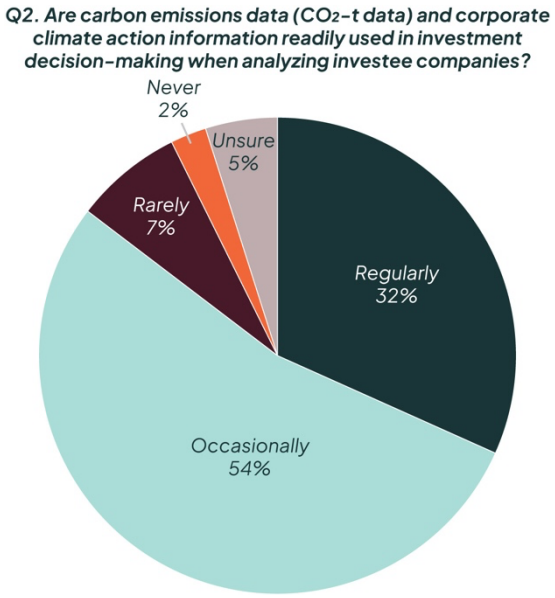
Questions and responses

Q1. How familiar are you with the future introduction of the GX-ETS in Japan (currently planned for 2026)?

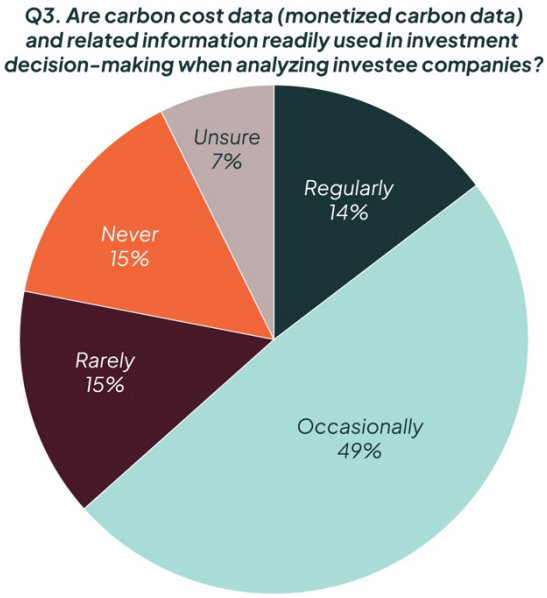
Most respondents indicated they were well-informed about the GX-ETS or generally aware of it. Those who considered themselves well-informed tended to be professionals engaged in stewardship activities and analysts covering high-emitting sectors.



Q2. Are carbon emissions data (CO_2-t data) and corporate climate action information readily used in investment decision-making when analysing investee companies?



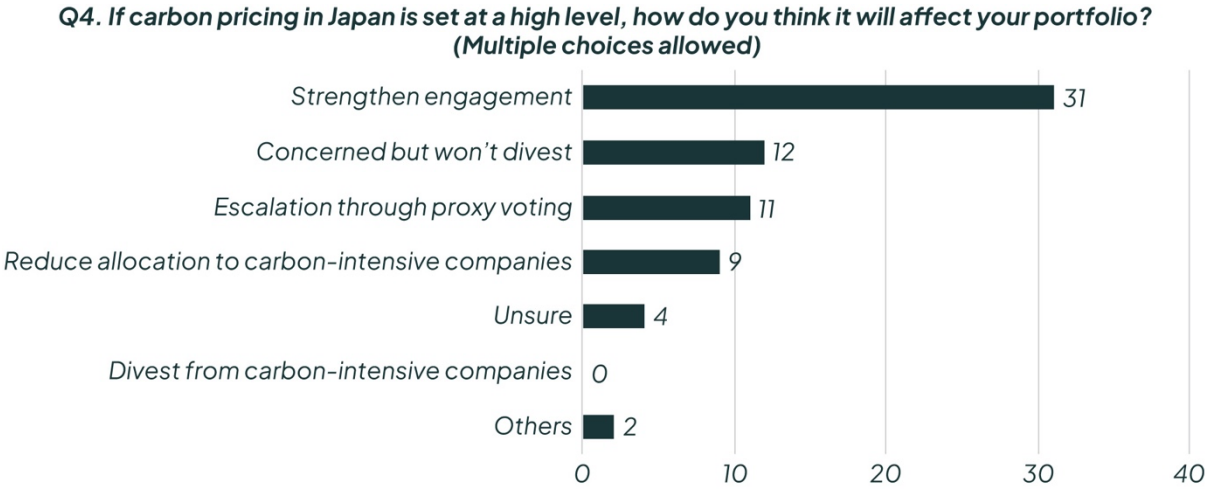
Q3. Are carbon cost data (monetised carbon data) and related information readily used in investment decision-making when analysing investee companies?



Most (86%) respondents have incorporated general carbon-related information, such as CO_2 emissions and emissions reduction targets, into their investment processes. As more companies disclose climate-related data and data providers enhance their datasets, the use of such information is expanding not only among those engaged in stewardship activities but also among fund managers. In contrast, the regular use of carbon pricing data is currently largely limited to respondents involved in stewardship activities and sector analysts covering high-emitting sectors.

Q4. If carbon pricing in Japan is set at a high level, how do you think it will affect your portfolio? (Multiple choices allowed)

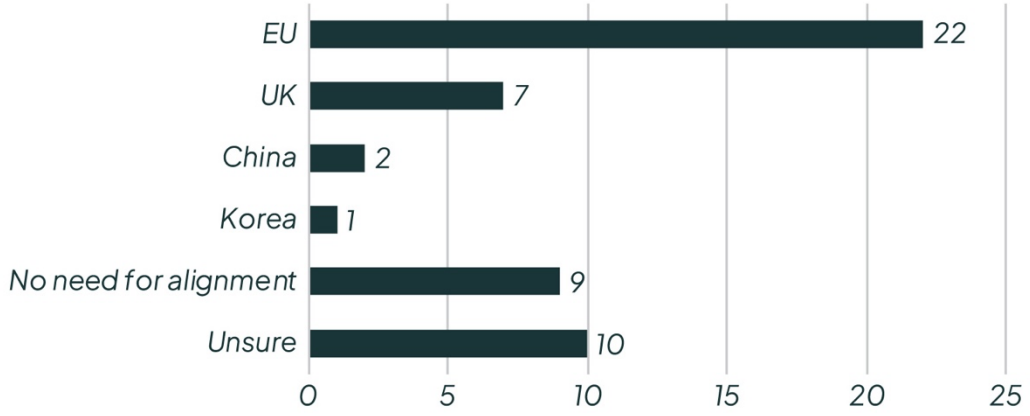
Regarding the impact of rising carbon costs on investment decisions, results show that investors intend to strengthen engagement efforts when the carbon pricing is set at a high level. Divestment does not appear as a plausible strategy. However, some would consider underweighting and reducing their exposure to impacted carbon-intensive companies. A notable portion of respondents anticipate the possibility of complementing the engagement by escalating through proxy voting.



Q5. In your view, which countries or regions should the carbon price under Japan's GX-ETS be coordinated with? (Multiple choices allowed)

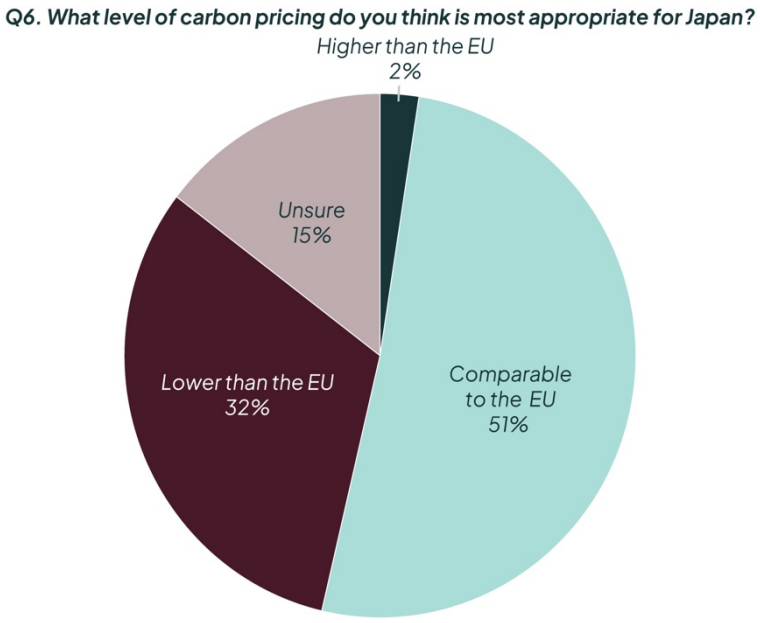
When asked which country or region Japan should align carbon pricing with, about half of the respondents cited the EU. This likely reflects a shared view that EU-level pricing is necessary to provide sufficient cost incentives for advancing climate action. On the other hand, a subset of respondents answered that Japan does not need to align with any particular country or region. This shows that consideration of Japan's domestic context is an important perspective.

Q5. In your view, which countries or regions should the carbon price under Japan's GX-ETS be coordinated with? (Multiple choices allowed)



Q6. What level of carbon pricing do you think is most appropriate for Japan?

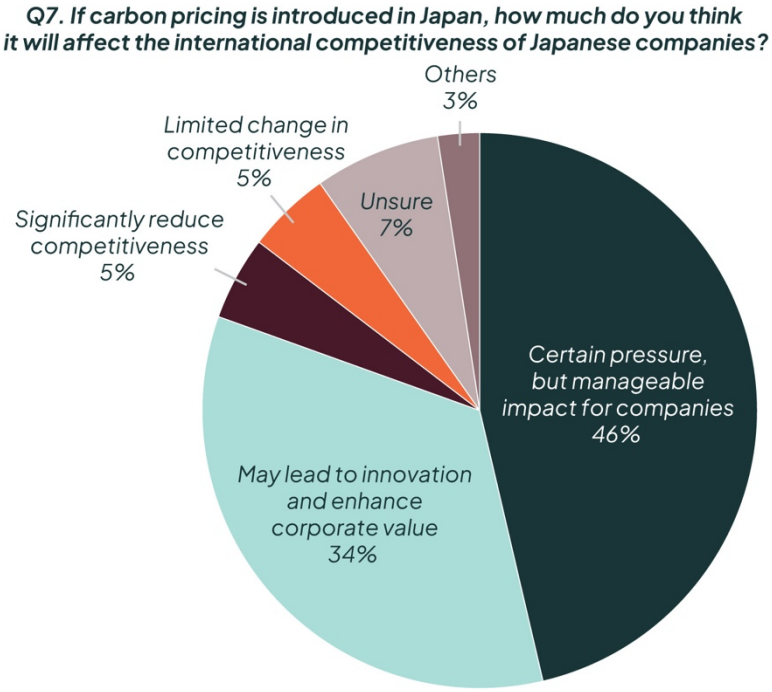
When presented with the current carbon pricing level in the EU (85-65€/ton as the price range of the past 12 months) and asked what level Japan's carbon price should be, 51% of respondents answered that it should be comparable to the EU price.[2] Meanwhile, 32% responded that it should be lower than the EU level. The response options included explanatory notes such as "Higher than the EU [to drive strong transition]," "Comparable to the EU [emphasising consistency with other regions]," and "Lower than the EU [due to economic/industrial considerations]."



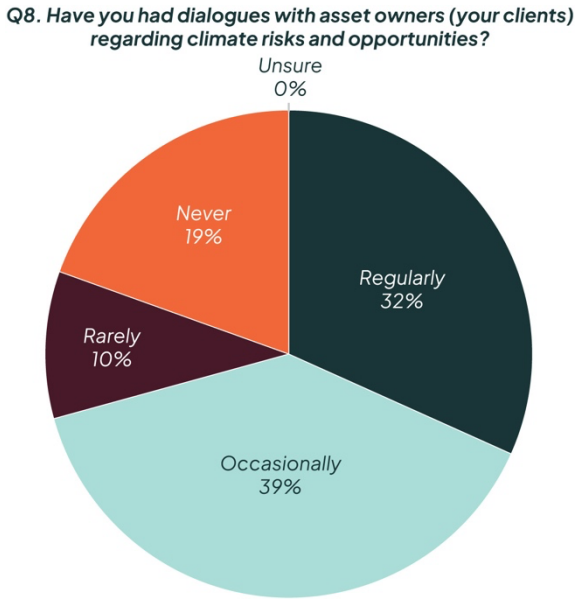
[2] Trading Economics (website), accessed 1 Sep, 2025.

Q7. If carbon pricing is introduced in Japan, how much do you think it will affect the international competitiveness of Japanese companies?

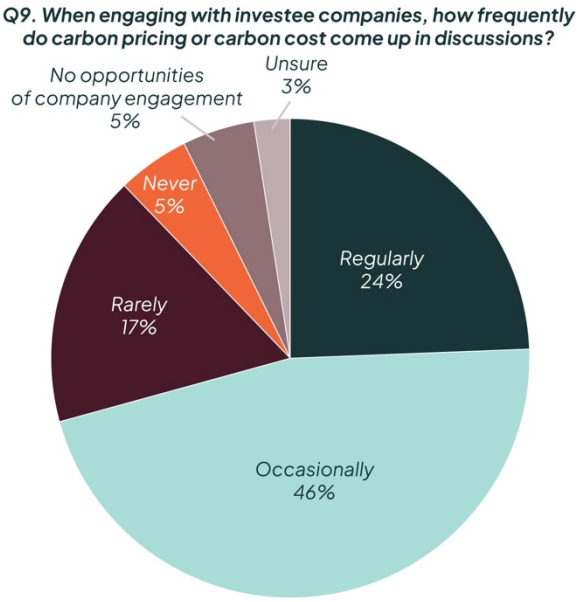
When asked about the potential impact of introducing carbon pricing on Japanese companies, most responses indicated "Certain pressure, but manageable impact for companies", and it "May lead to innovation and enhance corporate value." These results suggest that **investors anticipate Japanese companies' ability to manage cost pressures and view carbon pricing as a potential catalyst for innovation**.



Q8. Have you had dialogues with asset owners (your clients) regarding climate risks and opportunities?



Q9. When engaging with investee companies, how frequently do carbon pricing or carbon cost come up in discussions?



The majority of respondents reported having regular or occasional opportunities to discuss climate-related risks and opportunities in conversations with clients. **These interactions were not limited to those engaged in stewardship activities; fund managers also indicated that climate change is a topic of discussion in client dialogues.** Similarly, in engagements with investee companies, respondents raised climate-related risks and opportunities with comparable frequency.

Summary of survey findings

In Japan, developing disclosure frameworks and promoting transition policies have led to more frequent use of information on climate-related risks and opportunities among investors. The interest in the GX-ETS and estimating emissions and assessing the financial impacts of these emissions is also increasing. While many investors incorporate carbon-related information into their investment decisions, the consistent use of carbon pricing data remains limited.

Investors believe that Japan should align its carbon pricing more closely with EU levels, rather than with the relatively low prices seen in China and South Korea. Japanese companies are considered capable of managing the cost implications of carbon pricing effectively. Moreover, even at EU-level prices, **investors expect Japanese firms to respond by advancing innovations that help mitigate or avoid these costs**.

In Japan, there are concerns about insufficient funding for the transition. The costs paid through the GX-ETS are expected to be allocated towards future payouts for Japan's GX bonds. An ideal carbon pricing system would ensure that sufficient funds flow to companies to advance GX initiatives, while also collecting enough cost contributions through the GX-ETS to cover those payments.

Investors may anticipate that the GX-ETS system design and supporting data infrastructure be finalised before engaging with companies more actively. Robust and transparent systems are essential to ensure the scheme's credibility, and many investors appear to be monitoring progress while preparing for more active engagement once the foundational elements are in place.

Chapter 2: Cases of climate integration at Japanese asset management companies

Asset management firms need to establish clear policies, systems and investment strategies to enable the incorporation of climate-related information into their investment teams' financial decisions. This chapter highlights how Japanese asset managers are equipping their investment teams to use climate-related information, focusing on three key perspectives:

1. The current state of climate-related information utilisation
2. Approaches to managing climate-related risks
3. Investment strategies that emphasise the link between climate change and corporate value enhancement.

We base these case studies on desktop research and interviews with individual firms, particularly **Nissay Asset Management** and **Asset Management One**.

Climate Data Integration Case Study 1: Nissay Asset Management

Source: Interview with Nissay Asset Management (NAM), Sustainability Report 2025

Use of Climate-Related Data

- NAM measures the carbon footprint of its assets yearly, covering equities, corporate bonds and sovereign bonds. The measurement includes Scope 1 and 2 emissions.
- For climate risk management at the product level, the firm measures and monitors each portfolio's greenhouse gas emissions (GHG) emissions. It evaluates GHG measurement results for equity portfolios in internal meetings alongside financial performance data.
- The company's proprietary environmental, social, and governance (ESG) score assesses whether a company's climate change initiatives positively or negatively impact corporate value. Analysts assign one of four scores based on analysis through company interviews and corporate disclosures.
- The firm includes carbon pricing as an agenda item in its dialogues with companies, especially in their engagement with hard-to-abate sectors,

Climate Risk Management Approach

- NAM manages climate risk in its portfolios through engagement. The top 70 emitters in its portfolio account for 70% of Scope 1 and 2 emissions of its assets. Analysts and fund managers focus engagement on these 70 companies to promote decarbonisation of the assets. Investment decisions such as divestment are not made solely based on emission volumes.

Climate-Related Investment Strategy

- In June 2022, the firm launched a Japan Equity Climate Transition Strategy Fund. This impact strategy targets companies in high-emission industries and those providing technological solutions for GHG reduction.
- The strategy promotes emission reductions by engaging with the high-emission companies and encourages revenue growth opportunities by engaging with the solution providers, thereby contributing to the transition.
- The fund aims to reduce Scope 1, 2 and 3 emissions, and monitors, uses and reports GHG reduction contributions (avoided emissions) as a key performance indicator (KPI).

Climate Data Integration Case Study 2: Asset Management One (AMO)

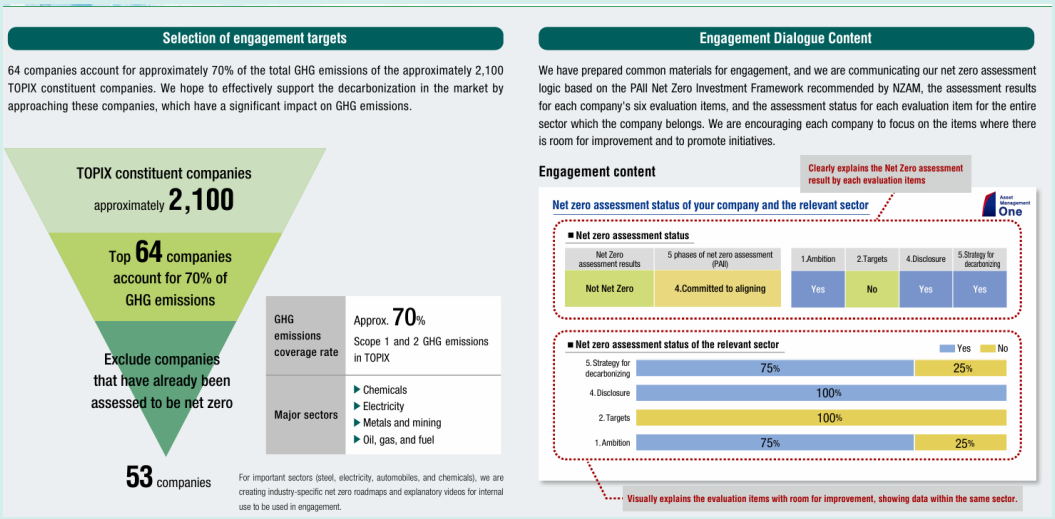
Source: Sustainability Report 2023; Sustainability Report 2024; Interview with AMO

Use of Climate-Related Data

- AMO has developed its own proprietary ESG scoring system. The ESG issues evaluated in this scoring are determined using AMO's original materiality map, in which they identify climate change as the most financially material and one of the most critical sustainability issues.
- AMO uses various ESG data from external data vendors as input for the ESG score. In assessing climate change, the evaluation covers factors such as CO_2 emissions, the presence and ambition of carbon reduction targets, and whether reduction programs are in place. It also incorporates insights that analysts gain through engagement activities and corporate disclosures into the ESG scoring system.

Climate Risk Management Approach

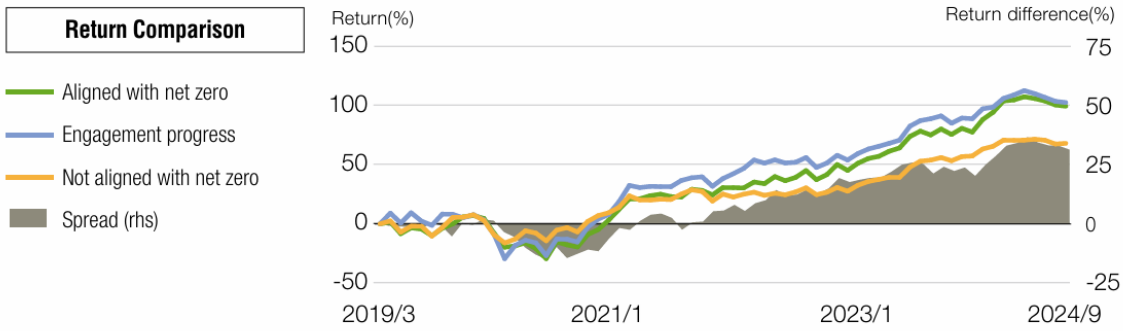
- AMO is currently exploring ways to assess the potential impact of GX-ETS implementation on corporate value by estimating the profit impact of carbon pricing based on the carbon emissions of its investee companies (publicly listed Japanese equities).
- AMO utilises the Net Zero Investment Framework (NZIF) to assess companies' net zero alignment across five key dimensions: ambition, targets, disclosures, performance and decarbonisation plans and capital allocation. Based on these assessment results, AMO implements a net zero engagement strategy that targets areas where companies were found lacking, specifically alignment with net zero.
- For actively managed funds, AMO measures portfolio emissions using weighted average carbon intensity (WACI) to compare the results against a net zero trajectory index, and determine the fund's net zero alignment accordingly. It monitors WACI data for active funds alongside fund performance metrics.



The chart above is extracted from Sustainability Report 2024, p. 12.

Climate-Related Investment Strategy

- In February 2024, AMO launched its All-Japan Carbon Neutral Strategy. This strategy determines portfolio weights based on net zero alignment assessments. By increasing the weights of companies with strong track records in reducing their WACI, the strategy has achieved a 24% reduction in WACI compared to TOPIX. Further, by increasing the weights of companies that have progressed their net zero engagement, the strategy incentivises portfolio companies to implement net zero strategies and enhance climate-related disclosures.



The chart above is extracted from Sustainability Report 2024, p. 11.

Findings from case studies

We found that both firms have developed proprietary ESG scoring systems, with climate change positioned as a key evaluation item. NAM primarily relies on sector analyst assessments. At the same time, AMO uses a combination of data-driven evaluation — such as carbon emissions and reduction targets — and analyst insights. Both firms highly value analysts' daily information gathering and insights, reflecting their intention to apply ESG scores to active fund management and to incorporate forward-looking perspectives as critical inputs.

In terms of climate risk management approaches, both firms emphasise engagement. They actively analyse the relationship between climate-related corporate evaluation results and corporate value. These efforts show a proactive stance towards understanding the link between climate change and corporate value.

It is essential to incorporate climate-related information into investment decision-making. NAM manages a transition strategy through an impact fund, using avoided emissions from solution providers as a KPI. AMO applies net zero alignment assessments to determine portfolio weights and increases the weight of companies in the portfolio that have shown progress through net zero engagement. These practices represent a

consistent approach from corporate evaluation to engagement and investment strategy.

Among Japanese asset management firms that participated in the research,[3] AMO was the only firm currently considering using carbon pricing data for corporate valuation. As carbon pricing mechanisms like the GX-ETS become more concrete and integrated into national policy, we expect investors to recognise carbon pricing as a structural, foreseeable cost — one they should factor into valuations, risk models and engagement strategies. The emphasis is on moving from passive observations to proactive, strategic responses.

[3] AIGCC held interview sessions with three Japanese asset management companies and collected a written response from one Japanese asset management company that is an AIGCC member.

Chapter 3: Research contribution from MSCI – What Japan's GX-ETS Launch Could Mean for Corporate Earnings

Authors: Yukie Shibano, Kenji Watanabe, Manish Shakdwipee; MSCI Inc.

This contribution includes an edited excerpt from a blog originally published by MSCI in October 2025, adapted for inclusion in this report. This material is reproduced with permission from MSCI, which retains all copyright.

- As Japan's Green Transformation Emissions Trading Scheme (GX-ETS) becomes mandatory in 2026, assessing firms' carbon footprints, earnings at risk and transition indicators may help investors build more resilient portfolios.
- Carbon pricing can hit earnings in high-emitting sectors. If the carbon price rose to USD 70 per ton, similar to the EU Emissions Trading Scheme (EU-ETS), utilities and materials firms could face median earnings at risk of over 10%.
- Cutting emissions is critical to limit financial impacts on business performance and portfolio returns. Japanese firms with credible transition plans may be better positioned to decarbonize.

As Japan prepares to roll out its first mandatory carbon market under the GX-ETS, investors face a new layer of financial and transition risk. The scheme will bring carbon costs directly onto company balance sheets, making it critical for investors to understand how emissions exposure, pricing power and transition readiness could influence future earnings — and long-term portfolio resilience.

Not all carbon emissions are equally material for companies

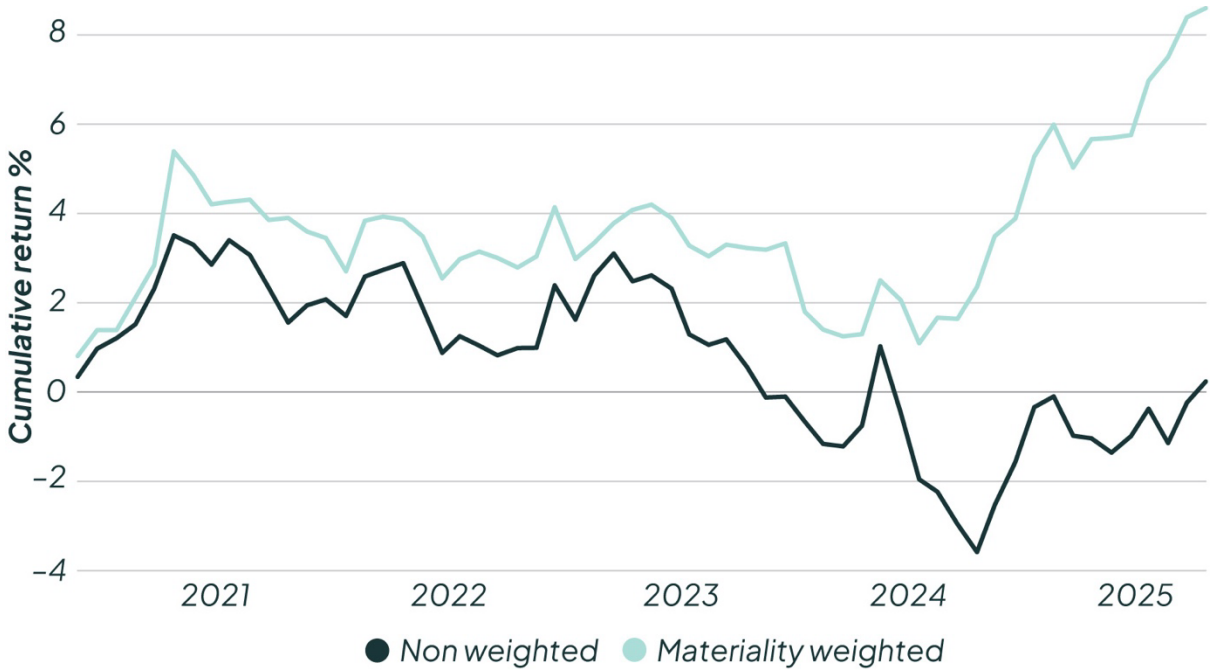
The total carbon footprint of a portfolio has commonly been used to gauge both climate impact and transition risk, but this approach ignores financial materiality. Our analysis shows that when emissions are weighted by financial materiality, a clearer link emerges to financial outcomes.[4] While a ton of CO2e has the same impact on the climate no matter how it is emitted, a materiality-weighted approach focuses on the scope of emissions that are financially material due to technology or market pressures, which differ by industry. Over the past decade, this approach showed stronger correlation with global equity-market outperformance than a non-weighted approach and carbon-efficient companies outperformed their more carbon-intense sector peers.[5]

[4] Guido Giese et al., "Materiality-Weighted Portfolio Carbon Footprint," MSCI ESG Research, June 2025. The materiality-weighted carbon footprint approach is a portfolio weighting approach that focuses only on the scope of emissions most exposed to business pressure, where better (i.e., more efficient or cheaper) alternatives are available that incentivize firms to pay to upgrade to keep up with leading peers, in each sub-industry. The portfolio analysis in the report was based on the constituents of the MSCI ACWI Index.

[5] Ibid

We observed the same pattern in Japan.

Factor performance of Scope 1, 2 and 3 carbon efficiency in the MSCI Japan Investable Market Index



Data for the period June 30, 2020, to May 30, 2025. Using the MSCI Global Equity Model for Long-Term Investors (GEMLT), the chart shows that the materiality-weighted approach had a stronger relationship with stock performance than using total emissions (non-weighted). We assessed the financial impact of carbon efficiency — with and without materiality weighting — while controlling for sub-industries, countries, currencies and equity style factors using Scope 1, 2 and 3 carbon efficiency (defined as the negative logarithm of revenue-based carbon intensity) as a factor in GEMLT. Past performance, whether actual, back tested or simulated, is no indication or guarantee of future performance. Source: MSCI Sustainability & Climate. MSCI Sustainability & Climate products and services are provided by MSCI Solutions LLC in the United States and MSCI Solutions (UK) Limited in the United Kingdom and certain other related entities.

Estimating earnings at risk under different carbon-price scenarios to understand the implications of the GX-ETS

From April 2026, the GX-ETS will price Scope 1 emissions for companies averaging in excess of 100,000 tCO2e over three years.[6] For these heavy emitters, carbon costs could weigh on earnings. We analyzed earnings at risk from Scope 1 emissions above this threshold, treating it as a financially relevant carbon footprint under the scheme.

The impact of the GX-ETS will vary across sectors and depend on the effective price of carbon. We modelled companies' earnings sensitivity to carbon prices — earnings at risk — based on a potential effective carbon price of USD 1 per tCO2e. This measure reflects

[6] "Toward the Detailed Design of the Emissions Trading System – Consideration Policy," Ministry of Economy, Trade and Industry, July 2, 2025.

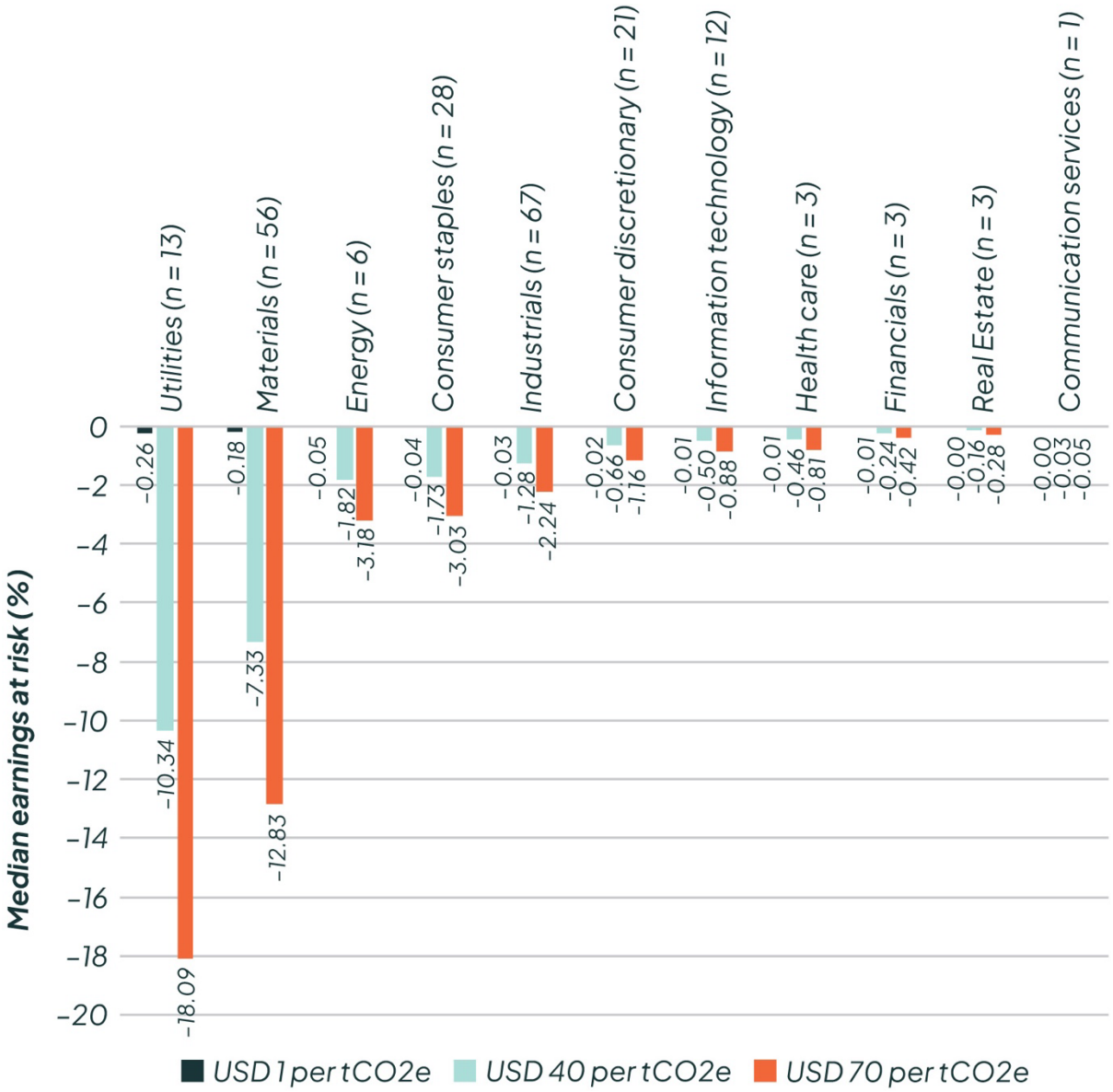
both emissions levels and the ability to pass costs on to customers.[7] Estimated pass-through rates per GICS sub-industry reflect factors such as regulations and demand elasticity. The GX-ETS applies to companies that emit Scope 1 emissions over certain threshold in Japan. Our analysis focused on the companies domiciled in Japan using the constituents of the MSCI Japan Investable Market Index (IMI) with average Scope 1 emissions exceeding 100,000 tCO2e over the past three years, without considering the region where emissions occur, based on our assumption that the companies domiciled in Japan typically operate mainly in Japan. Also, under the GX-ETS, it is possible that companies will receive free allowances, i.e., a permit that allows them to emit a specified amount of GHG emissions at no cost. This analysis assumes that companies need to purchase allowances for all Scope 1 emissions, thus assuming the scenario with the highest potential risk.

Using sector medians, we found that companies in the utilities, materials and energy GICS sectors face the highest earnings at risk. Analysis of three carbon-price scenarios indicates that if the price rose to USD 70 per ton, in line with the EU-ETS,[8] median earnings at risk for utilities and materials companies could surpass 10%.

[7] Pass-through rates are sourced from existing literature and are mapped at the Global Industry Classification Standard (GICS®) sub-industry level. GICS is the industry-classification standard jointly developed by MSCI and S&P Dow Jones Indices. Earnings at risk (%) = (-emissions x Δcarbon price x (100-pass-through rate))/earnings.

[8] "State and Trends of Carbon Pricing Dashboard," World Bank Group, last accessed Sept. 8, 2025.

Median earnings at risk by sector



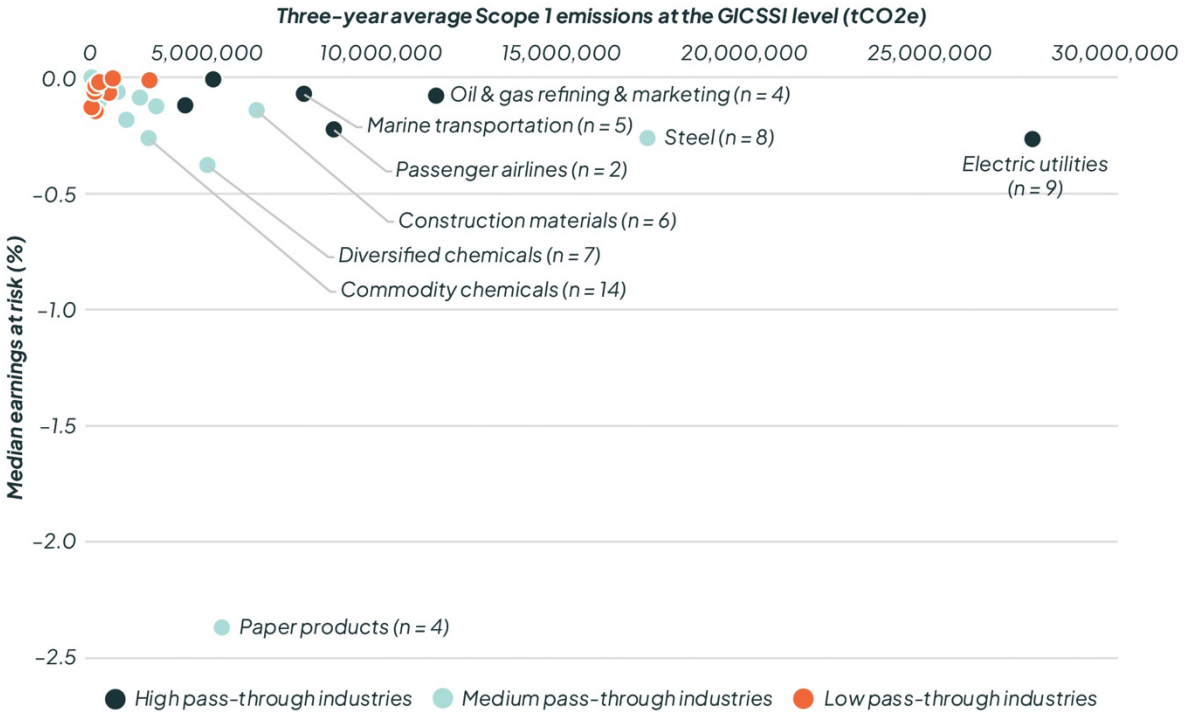
Data as of September 2025. The analysis covers companies with average Scope 1 emissions exceeding 100,000 tCO2e over the past three years (2021-2023). Earnings at risk are calculated using the median value within each GICS sector, under three price scenarios: USD 1, USD 40 and USD 70 per tCO2e. Source: MSCI Sustainability & Climate

Earnings at risk in high emitting sectors

Even within the high-emitting sectors, earnings at risk can vary widely across sub-industries. Those with higher pass-through rates typically have stronger pricing power than those with medium or low pass-through, influenced by factors such as regulations and demand elasticity (e.g., customer price sensitivity, availability of substitutes). For example, oil & gas refining & marketing (a high pass-through industry) showed smaller

earnings at risk than manufacturing industries like paper products (a medium pass-through industry) despite higher emissions.[9]

Scope 1 emissions and earnings at risk by sub-industry

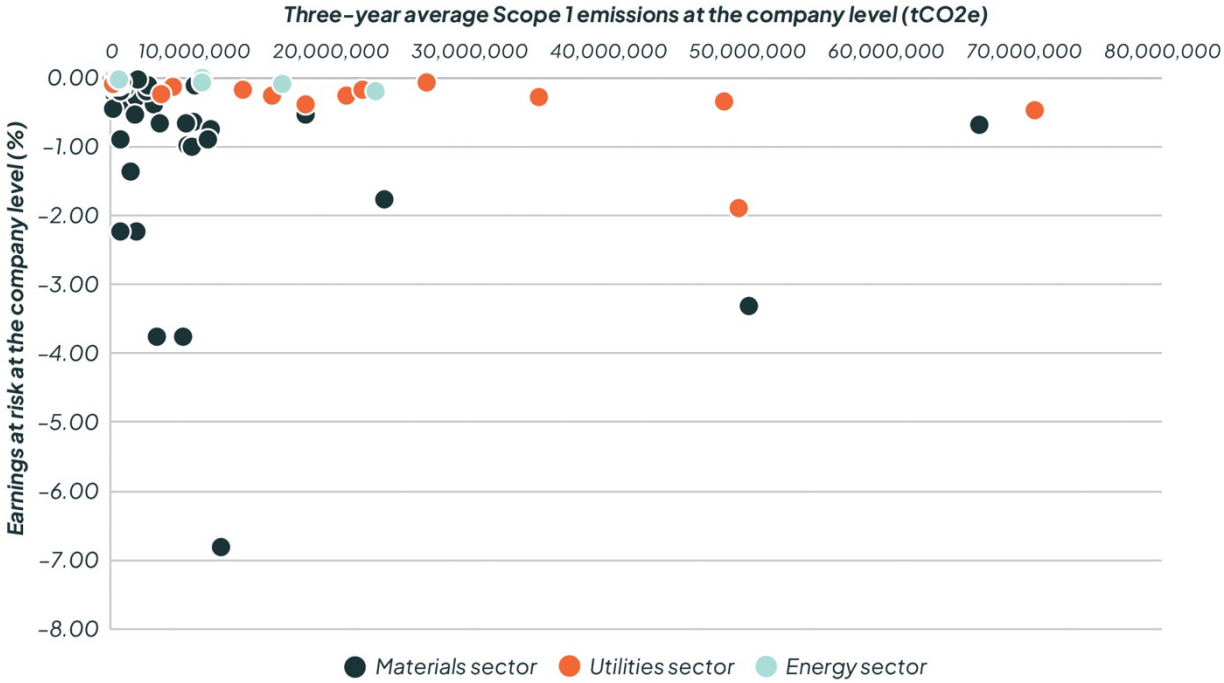


Data as of September 2025. The analysis covers companies with average Scope 1 emissions exceeding 100,000 tCO2e over the past three years (2021-2023). Sub-industries that had only one issuer were excluded from the analysis. We assumed the cost at USD 1 per tCO2e. Source: MSCI Sustainability & Climate

At the company level, combining emissions data with estimated pass-through rates shows a wide potential range of earnings at risk. This means looking beyond emissions intensity to a company's ability to absorb or transfer costs to customers.

[9] Natalia Fabra and Mar Reguant, "Pass-Through of Emissions Costs in Electricity Markets," National Bureau of Economic Research Working Paper No. 19613, November 2013.
Isabel Gödl-Hanisch and Manuel Menkhoff, "Firms' Pass-Through Dynamics: A Survey Approach," CESifo Working Paper No. 10520, August 2025.

Company-level earnings at risk and Scope 1 emissions



Data as of September 2025. The analysis covers companies with average Scope 1 emissions exceeding 100,000 tCO2e over the past three years (2021-2023) in the materials, utilities and energy sectors. Source: MSCI Sustainability & Climate

Transition-related indicators and the path to emissions reduction

Given the potential incoming costs relating to emissions, investors may wish to forecast companies' future emissions and identify those best positioned to continue decarbonizing. We tested a range of transition indicators[10] over the past three to five years and found that firms with credible transition plans were more likely to reduce future emissions.[11]

For Japanese companies, indicators such as those based on Science Based Targets initiative (SBTi) targets, target progress and green revenues showed statistically significant predictive power of decarbonization. Values (t-statistics) in the exhibit indicate the difference between the top and the bottom tertile per indicator, with negative values indicating faster reduction in the top tertile, and t-statistics with absolute value higher than two are generally considered significant enough to conclude fundamental difference. A similar pattern was observed for the global peers exhibited for the MSCI Kokusai Investible Market Index (IMI) constituents, with green revenues

[10] Transition indicators that we identified include target and governance indicators, low-carbon indicators such as green-bond investments or green patents, and revenue-based indicators such as green revenues or fossil-fuel-based revenues.

[11] Zoltán Nagy et al., "Smoke Signals: Finding Leading Indicators of Corporate Decarbonization," MSCI ESG Research, October 2025.

showing particularly strong significance within Japanese companies.[12] Green revenues may indicate when low-carbon technologies extend beyond product development to production processes (such as the development and the use of renewable energy by utilities or energy companies). For example, ENEOS Holdings, Inc. had among the highest percentage of green revenues within the Japanese energy sector in 2018 and demonstrated a higher pace of emissions reduction than the sector average during 2018 and 2023. The company has generated revenues from supplying renewable energy,[13] and has implemented energy management and remote-control systems to optimize battery charging and discharging in its sites.[14] These technologies may have helped the company reduce its operational emissions.

Statistical relevance of transition indicators in predicting 3- to 5-year Scope 1 and 2 emissions change for the MSCI Japan IMI and MSCI Kokusai IMI

Index	MSCI Japan IMI			MSCI Kokusai IMI		
Analysis period (years)	3	4	5	3	4	5
Environmental opportunities themes score	-1.51	-0.55	-1.62	-1.04	-1.93	-0.13
Weighted average climate risk management score	-0.50	-0.57	-1.70	-2.70	-2.62	-1.42
Log (internal carbon price)†	-0.17	0.38	-0.36	-0.53	-0.89	0.29
Has carbon price†	-0.46	-0.26	0.61	-3.39	-3.33	-3.04
Committed to SBTi target†	-0.30	-0.68	1.08	-1.97	-1.50	-1.14
Has SBTi target†	-2.44	-1.38	-0.60	-3.63	-4.43	-3.48
Has reduction plans†	-0.25	-0.72	-0.60	-6.25	-5.28	-3.88
Target progress†	-1.66	-2.71	-2.34	-4.97	-4.20	-1.95
Has issued green bonds	-1.60	-0.81	1.79	-3.40	-2.57	-2.82
Log (green patents)	-0.85	-2.00	-0.81	-2.13	-2.22	-2.06
Log (green revenues)	-2.73	-1.62	-2.72	-0.77	-1.76	-0.91
Green minus fossil revenues	-3.99	-3.31	-3.11	-0.12	-1.19	-0.58

Data from 2018 to 2023. A two-sided t-test with unequal variances is calculated to see if the mean of emission change in the top tertile is different from the mean in the bottom tertile. Negative values indicate faster reduction in the top tertile. Tertiles are constructed by sector, except for the greenhouse-gas mitigation score where only global tertiles could be created due to the distribution of the score. For non-numerical variable like SBTi and Paris-aligned indicators, the bottom bucket contains issuers with no target or that are not aligned; the top bucket contains issuers with an SBTi-approved target or are flagged as 'committed,' 'aligned' or 'aligning.' Azure shading indicates results of negative correlation, and raspberry shading indicates positive correlation. Dagger (†) indicates variables for which not enough history was available to conduct a forward-looking test that correlates past values with subsequent changes in emissions. For those variables, we used the available values and correlated them with past or contemporaneous changes in emissions. Source: MSCI Sustainability & Climate

[12] Green revenues represent the total revenues derived from climate-related technologies such as alternative energy, energy efficiency and green buildings.
[13] Company website, Electricity Business | Business Segments | ENEOS Holdings, accessed in October 2025.
[14] Company news release, "Start of Remote Control for Charging/Discharging Using Industrial-Scale Batteries at the Negishi Refinery," August 17, 2023. 20230817_01_01_0906370.pdf

Positioning for Japan's carbon-priced future

The launch of Japan's GX-ETS signals a fundamental shift for Japanese companies in how carbon risk is priced and managed across industries. As carbon costs become an explicit line item, investors will need to evaluate which companies can maintain margins and competitiveness under rising carbon prices.

Our analysis highlights that combining *earnings-at-risk* modeling using *pass-through dynamics* and *transition indicators* such as SBTi targets and green revenues can provide a more forward-looking picture of corporate resilience. Firms with credible transition plans and the ability to pass costs to customers may not only mitigate downside risk but also capture green revenues as capital shifts toward lower-carbon business models.

For investors, integrating these insights into portfolio construction, engagement and risk management may be key to navigating — and benefiting from — Japan's accelerating energy transition.

Conclusion

AIGCC's investor survey revealed further insights into investor expectations of the introduction of the GX-ETS, Japanese companies will make greater efforts to enhance corporate value and reduce costs. Results show that while Japan's transition strategy will help to deliver meaningful outcomes, frameworks like the GX-ETS must consider a long-term carbon price level comparable to the EU's.

However, among the investment professionals who responded to the survey, understanding of the current GX-ETS framework discussion appears limited to specialists or analysts/engagement staff covering high-emitting sectors. Going forward, active investor engagement in policy discussions will become increasingly important.

The report also highlighted advanced practices among Japanese asset managers in their use of climate-related data and information, including climate engagement activities, ESG scoring, and integration into investment strategies. The support and alignment from asset owners will be crucial for asset managers in Japan to strengthen the incorporation of climate factors in corporate evaluation of investee companies.

MSCI's research contribution and insights on "climate earnings at risk" show that the foundation of corporate value ultimately depends on how climate policy affects earnings and how effectively companies can translate those impacts into growth opportunities. In this context, we have identified the ability to pass costs on to customers as a key factor.

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About AIGCC

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The Asia Investor Group on Climate Change (AIGCC) is the leading network of investors in Asia focussing on risks and opportunities in climate and nature – which are key to investors' fiduciary duty.

Our 80+ members have a combined AUM of $36 trn and have headquarters in 11 markets across the region.

We were founded by institutional investors as a not-for-profit to drive action on climate, and bring an evidence driven, long-term focus on climate, nature, and investment across Asia.

Our work is underpinned by science, economics, and a highly effective theory of change that channels the influence of powerful Asian and international institutional investors, integrated across finance, business and policy making towards systemic impact.

We bring deep knowledge and familiarity with Asian markets and dynamics, and play a founding role in global initiatives, making us a trusted force in driving climate-aligned finance across the region and globe.